

## Abstract of the Disclosure

An arrayed waveguide grating type optical multiplexer/demultiplexer according to the present invention multiplexes or demultiplexes the lights of desired wavelength without depending on the outside environmental temperature thereby realizing a high quality optical wavelength division multiplexing communications. A waveguide forming part 10 comprising connecting in series of one or more optical input waveguides 12, a first slab waveguide 13, an arrayed waveguide 14 consisted of a plurality of channel waveguides 14a arranged side by side with a length different from each other, a second slab waveguide 15 and a plurality of optical output waveguides 16 arranged side by side is formed on a substrate 11. At the output ends of one or more optical input waveguides 12 is provided, for example, a trapezoidal type waveguide 5. The trapezoidal type waveguide 5 is formed by providing a width larger than that of the optical input waveguide or the optical output waveguide to be connected and enlarging its width increasingly toward the corresponding slab waveguide. The optical multiplex/demultiplex function of the arrayed waveguide grating type optical multiplexer/demultiplexer is designed by a optical frequency spacing of 100 GHz and a light which has undergone wavelength division multiplexing having, for example, an optical frequency spacing of 200 GHz is outputted to be demultiplexed.